Looking forward: working together to achieve GBIF’s strategic priorities

Joint session for GBIF Participants and nodes
PRIORITY 1: SCIENCE AND RESEARCH

Improving biodiversity evidence for scientific research and understanding
PRIORITY 1: SCIENCE AND RESEARCH

- Activity 1.1: Drive mobilization and use of biodiversity data to support priority thematic areas of relevance
- Activity 1.2: Advance GBIF’s contribution to latest biodiversity modelling approaches
- Activity 1.3: Support open science principles
NATIONAL / REGIONAL EFFORTS FOR DATA MOBILIZATION
• +50 National reference checklist
  • 🦁 Mammals
  • 🐟 Freshwater fishes
  • 🦜 Birds
  • 🌿 Plants and lichens
  • 🐢 Threatened species, according to resolution 1912 of 2017 of MADS.
  • 🦚 Invasive species, according to GRIIS.
  • 🌿 Hydrobiologicals: macroinvertebrates and macrophytes

https://biodiversidad.co/post/2022/listas-referencia-taxonomica/
• Support for the application of data on the state of knowledge of the biodiversity of protected areas.

• To generate recommendations to guarantee the persistence of Colombia's National Parks.

• First results of this support by the end of 2022

• Annual report.
• Support for the application of data in the generation of metrics and indicators to facilitate decision-making on biodiversity, providing environmental authorities and private companies with a synthesis of existing, updated and reliable information in a national and subnational context.

• Distribution models vs Observed.

• Continental biodiversity gaps.

http://biotablero.humboldt.org.co/
• Involvement in national policies on open science and data to implement FAIR principles.
• SiB Colombia as one of the most important initiatives for the design of the policy.
• It will aim to increase access, visibility, reproducibility and value of the data.

• National Biodiversity Data Centre released a report on the State of Ireland’s Biodiversity in 2010

• Data Centre to update to the State of Knowledge and Key Knowledge Gaps in Ireland’s Biodiversity report as the basis for development of a national biodiversity monitoring framework by 2024
Engage with SCAR Community mobilise data using Darwin Core standard.

Work with Researcher developing spatial analysis of Antarctic and Southern Ocean biodiversity using GBIF mediated data

Implementation of SCAR updated data policy

PRIORITY 1: SCIENCE AND RESEARCH
SYMBIOTA SUPPORT HUB

- Huge amounts of data mobilized:
  - > 70 million occurrences from > 1,800 collections
  - Support of georeferencing/data augmentation
  - 13 million occurrences sent to GBIF
- Enabling dataset curation
- Data model in constant evolution
  - Different areas of research/requirements
- Promoting the Extended Specimen
Engagement within the training program of biodiversity informatics at my Faculty for data mobilization and data use to inform decisions on:

- Control of propagation risks of vector-borne diseases
- Reforestation species conservation and sustainable uses
- Wildlife conservation and sustainable use
GBIF AND FRESHWATER

Daphnia galeata Sars, 1864 observed in Russia by Ivan (CC BY-NC 4.0)
https://www.riparias.be/

With the LIFE RIPARIAS project, Belgian authorities pool their resources together to optimize the management of invasive alien species in river areas and ponds across regional borders. This project has received funding from the LIFE Programme of the European Union.
DNA-DERIVED DATA & OTHER NEW DATA TYPES
- Contribution to the first translation of guide on sharing DNA-derived occurrence data with four other francophone nodes

- Plan to mobilise data sets on eDNA
Mobilise Datasets
Support data exchange and lead the transmission of datasets to GBIF

- DNA derived data from monitoring programs (Reuss river; Macun cirque) and reference genetic data (soil mites and acarians; orthoptera; aquatic insects; vascular plants)
- Specimen museum data from partner institutions (MHNG – Mammals; NMBE – Molluscs; EAWAG – Amphipods; WSL – Fungi; ...)

Contribute to Initiatives
Guide on data flows and provide GBIF-mediated data

- Digitisation of scientific collections (SwissCollNet)
- Valorization of the ecological infrastructure in the parks of national importance
Contribute to updating current guidance on publishing DNA-derived data – SBDI Molecular group.

Focus on mobilizing molecular data and setting up data pipelines for e.g. Center for Genetic Identification (CGI).

Interested in contributing to documentation and discussions on node level guidance on ILK.

Collaborate with BiCIKL, Species 2000 / Catalogue of Life in developing recommendations for how infrastructures could report usage and impact in a more consistent way.

GBIF Sweden is since 2021 part of the national research infrastructure SBDI (https://biodiversitydata.se/)
• Encouraging publishing data of various types including DNA, multimedia and soundscape
• Translating GBIF’s DNA data publishing guide to traditional Chinese
• Investigating biodiversity data gaps in Taiwan and determining goals to fill the gaps
• Providing advice and technical and financial support for data paper publication
SUPPORTING OPEN SCIENCE PRINCIPLES
Continue to raise awareness and build the capacity of researchers in universities and research institutes on the use of GBIF standards and tools;

Communication on the theme "GBIF Open Data for Biodiversity Conservation and Protection" at the Open Science in the South conference in Cotonou, Benin from October 25 to 27, 2022.
Diversifying the GBIF Data Model

Data Standards

- Maintenance of Darwin Core
- Application and Extension of Humboldt Core
- Contributions to Latimer Core

Ongoing support for data publishers with data cleaning, quality and mobilization

Image: *Copestylum isabellina* (Williston, 1887) by George Roark (licensed under [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/))
PRIORITY 1: SCIENCE AND RESEARCH

Improving biodiversity evidence for scientific research and understanding
PRIORITY 2: POLICY AND PARTNERSHIPS

Developing partnerships that benefit policy and society
PRIORITY 2: POLICY AND PARTNERSHIPS

• Activity 2.1: Support implementation of the post-2020 Global Biodiversity Framework
• Activity 2.2: Support the 2030 Agenda for Sustainable Development
• Activity 2.3: Support the science-policy interface
• Activity 2.4: Support nature-positive outcomes from private-sector decisions
SUPPORTING IMPLEMENTATION OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK
Completed analysis of primary biodiversity data and the Post-2020 Global Biodiversity Framework.

**White paper:** [https://docs.gbif.org/post-2020/en/](https://docs.gbif.org/post-2020/en/)

Support for on-going GBIF consultation and the role of GBIF in the Post-2020 Framework.

**Discourse:** [https://discourse.gbif.org/c/alliance-for-biodiversity-knowledge/post2020gbf/27](https://discourse.gbif.org/c/alliance-for-biodiversity-knowledge/post2020gbf/27)

Image: *Cantareus apertus (Born, 1778)* by Andrea Wuenschel (licensed under [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/))
PRIORITY 2: POLICY AND PARTNERSHIPS
INTEGRATION OF CBD NATIONAL CLEARING-HOUSE MECHANISMS (CHM, BCH, ABSCH) PLATFORMS INTO THE NODE GBIF GUATEMALA

- From 2022, homologation and integration of all CBD national platforms. Biodiversity (CHM), Biosafety (BCH), and Access and Benefit Sharing (ABSCH), "All in one"
- Increased use of data information
- Combination of different resources, documents, primary information, data, and others.
- Use of information for decision makers in protected area management and biodiversity conservation.
- Updating of official national lists of threatened species.
- Identification of indicators and possible sources for the preparation of national reports.
Support the implementation of the activities of the Head of delegation of GBIF-Benin who is the CBD focal point of Benin
- Continue negotiations with national policy makers on the inclusion of GBIF activities in the national budget;

- Connect the Cameroon Biodiversity Information System based on GBIF data to the DaRT (Data Reporting Tool) system which is a system based on the post 2020 Global Biodiversity Framework to facilitate reporting to the Convention on Biological Diversity (CBD).
PRIORITY 2: POLICY AND PARTNERSHIPS
NATIONAL BIODIVERSITY ACTION PLAN

- The 4th NBAP for Ireland is currently under development
- National biodiversity agenda for 2023-2027
- Build on the successes of previous NBAPs & address shortfalls
- Expand the governance and oversight of the NBAP and develop a robust Monitoring and Evaluation Framework to track progress
- Achieve buy-in across all levels of government and society
- Embed biodiversity at the heart of climate action and achieve greater coherence between policy areas, and strengthen compliance & enforcement of legislation
- Focus on causes and drivers and not the consequences of biodiversity loss
- Determine biodiversity priorities, allocate financial and other resources, internalize the value of nature and recognize the cost of inaction
- Strengthen the science base and enhance data accessibility
SUPPORTING THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT
GBIF data and GBIF derived data products can help provide support for policy support within the Antarctic Treaty System

- Committee for Environmental Protection (CEP) (terrestrial)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) (Marine)
PRIORITY 2: POLICY AND PARTNERSHIPS

COLLABORATIONS

• Data supporting Taiwan Biodiversity Observation Network (TaiBON)

• Involving in data management of Long Term Social-Ecological Research (LTSER) project in Taiwan

• Coordinating biodiversity informatics-related resources among major data stakeholders in Taiwan through Taiwan Biodiversity Information Association (TBIA)
SUPPORTING THE SCIENCE-POLICY INTERFACE
MICA - Management of Invasive Coypu and muskrAt in Europe

The Life MICA project (2019 – 2023) is a cooperation between German, Dutch and Belgian institutions which has the aim of establishing the efficient management of coypu and muskrat, by developing innovative cross-border methods for their population control. Among the participating institutions are waterbody authorities, invasive species management authorities and research institutions.
**Vespa-Watch: Monitor the invasion of the Asian hornet in Flanders**

Surveillance requires many eyes on the lookout, including yours! Find out here how you can help detect an Asian hornet in the citizen science project Vespa-Watch. Your data will then be used for control and research.
PRIORITY 2: POLICY AND PARTNERSHIPS
SYMBIOTA SUPPORT HUB

- Increasing connections
- Mobilizing international collaborations
  - Latin America, Africa and Asia
  - Outreach, education, training, consulting
  - Translations (Spanish and French)
- Supported by iDigBio’s rich network, the SSH is increasing reach within North American communities
PRIORITY 1: SCIENCE AND RESEARCH
DRIVE COLLABORATION WITH RELEVANT ACTIVITIES

MOBILISE DATASETS
SUPPORT DATA EXCHANGE AND LEAD THE TRANSMISSION OF DATASETS TO GBIF

- DNA derived data from monitoring programs (Reuss river; Macun cirque) and reference genetic data (soil mites and acarians; orthoptera; aquatic insects; vascular plants)
- Specimen museum data from partner institutions (MHNG - Mammals; NMBE - Molluscs; EAWAG - Amphipods; WSL - Fungi; ...)

CONTRIBUTE TO INITIATIVES
GUIDE ON DATA FLOWS AND PROVIDE GBIF-MEDIATED DATA

- Digitisation of scientific collections (SwissCollNet)
- Valorization of the ecological infrastructure in the parks of national importance
SUPPORT NATURE-POSITIVE OUTCOMES FROM PRIVATE-SECTOR DECISIONS
• Data sharing from the private sector.

• Private companies are increasingly demonstrating commitments to environmental and social responsibility by sharing data they collect during monitoring and impact assessment activities.

• 3 million data for 36 companies

https://biodiversidad.co/post/2022/empresas-colombianas-aportan-conocimiento-biodiversidad/
GBIF France will continue to support Data4Nature initiative from AFD (Agence Française de Développement):
Encouraging development actors and their counterparts to share their biodiversity data via GBIF.

Following the OpenPSD CESP project (5 nodes): Promoting publication and use of private-sector data on biodiversity, we pursue the mobilisation of private sector data

DEPOBIO: In accordance with the law of August 8, 2016 of the french Environmental Code, project owners, public or private, must contribute to the inventory of natural heritage by entering or, failing that, by submission of raw biodiversity data.
PRIORITY 2: POLICY AND PARTNERSHIPS

Developing partnerships that benefit policy and society
PRIORITY 3: COMMUNITY AND CAPACITY

Developing the GBIF network to meet future needs and challenges
PRIORITY 3: COMMUNITY AND CAPACITY

- Activity 3.1: Make the business case for GBIF
- Activity 3.2: Support and strengthen nodes
- Activity 3.3: Expand and strengthen national participation
- Activity 3.4: Develop capacity and skills
GBIF AS A NETWORK OF NETWORKS

Nodes coordinating national and thematic networks to expand GBIF’s reach
• Regularly-organized Ecological Informatics Mini-Symposium involving different research institutes and universities
• Annually-organized data mobilization and data use workshop
• Developing virtual data mobilization training materials
• Developing a volunteer training system to cultivate new talents within the community and to support TaiBIF’s work
• Popular science articles
• Asia Regional Project Support Team
• Continue to engage with data providers (e.g., government bodies, agencies, museums) to strengthen and expand national data publication and use
• Strengthen knowledge base around publishing different data types
• Target within the **National Biodiversity Action** plan – from 2024 a system is in place to facilitate enhanced contributions to EU and international data hubs and networks
PRIORITY 3: COMMUNITY AND CAPACITY
SYMBIOTA SUPPORT HUB

● Training and documentation
  ○ Symbiota Support Group (monthly live event)
  ○ Symbiota Docs (multilingual help/documentation website)
  ○ Software documentation through GitHub

● Portal Advancement Campaigns
  ○ Improving data quality
  ○ Promoting publishing to aggregators (GBIF)
  ○ Outreach to not-yet-mobilized collections
  ○ Re-invigorating existing communities

● Help desk
  ○ Timely, individualized help for portal users and administrators

1.3 million specimens added to GBIF in 2022
19 collections added to GBIF in 2022
• **Conference**
A journey into the world of biodiversity data standards and tools and will inform you on the latest developments in the world of Biodiversity Informatics, both internationally and locally. What is the state of the art in initiatives like GBIF, LifeWatch and DiSSCo, etc. and how can we let them work for us?

• **Biodiversity Informatics Market**
The Biodiversity Market, where you can visit market stands, dedicated to Biodiversity Informatics and all that is related.

• **Poster session**
• **Workshops**

[https://www.biodiversity.be/4409](https://www.biodiversity.be/4409)
NODES ROLES IN TRAINING

Nodes supporting capacity development for a stronger GBIF
Academic training to strengthen and expand national and regional data publication and data use
A recent user survey indicated a strong need for further training.
Including on:
- Data standards (TDWG Darwin Core)
- Data preparation for analysis
- Data preparation for publication

Also we try to have regular support for publication in Pensoft BDJ in combination with training
SiB Colombia strengthens its community of practice through training activities that enable its publishers and users to make effective use of the services offered.

These spaces have different formats and may vary annually depending on the scope and conditions: face-to-face workshops, e-learning, webinars, laboratories, among others.

https://biodiversidad.co/comunidad/formacion
IMPORTANCE OF COLLABORATION IN THE NODES COMMUNITY

Working together to tackle capacity needs
Expanding the Network: Bringing marine research and library collections into the data-sharing community

Extending knowledge on biodiversity data quality and publication in the Spanish-speaking community

Active training and mentoring efforts in all 6 GBIF regions

Image: *Callipepla californica* (Shaw, 1798) by Jodi Forster (licensed under [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/))
PRIORITY 3: COMMUNITY AND CAPACITY
FRANCE - BID/TRAININGS AND PROJECTS

- **Trainer and mentor** for data mobilization trainings

- **Partner in BID projects** (2021-2023):
  - National project: *Mobilization and strengthening of biodiversity data supporting sustainable development in Côte d’Ivoire*, lead by Koua Serge Beranger N’GORAN from Centre National de Floristique, GBIF Côte D’Ivoire
  - Regional project: *Progress towards a regional data platform of West and Central African herbaria* lead by Pierre Radji, GBIF Togo
PRIORITY 3: COMMUNITY AND CAPACITY
TRAINING ROUTE FOR THE BUSINESS SECTOR

• CESP 2022-010

• Enhancing data publication, access and use capacities in the private sector.

• Mentoring for LAC nodes:
  • Guatemala – Ecuador – Costa Rica
PRIORITY 3: COMMUNITY AND CAPACITY
DATA QUALITY AND PUBLICATION IN THE SPANISH-SPEAKING COMMUNITY

- CESP 2021-007 in progress.
- To increase the availability of high-quality biodiversity data from the Spanish-speaking community through the GBIF network.
- To improve capacity in the participant countries and in the Latin American región.

Five francophone GBIF nodes complete first translation of guide on sharing DNA-derived occurrence data

Collaborative translation efforts facilitate engagement with French-speaking halls of genomic and metagenomic information.

INFOSPECIES DATA CENTERS

- Report and promote data use for species conservation
- Share national checklists
- Contribute with validated occurrence data for more than 22'000 taxa

BIODIVERSITY BEYOND SPECIES

- Translate the document to French
- Publish pilot national datasets
- Organize a webinar in French

GBIF SWISS NODE

INFO SPECIES

GBIF
NODE-LEVEL INFRASTRUCTURE

Supporting data publishers and users with repositories and portals
PRIORITY 3: COMMUNITY AND CAPACITY
GBIF NEW ZEALAND

• Benefit of hosted-node
  • focus for NZ community: awareness, access
    • Build capacity and capability
  • Hub for engagement and collaboration

• Next
  • Investigate IPT-hosting
  • Support mobilisation from agencies holding key biodiversity data for the Global Assessment
Continue work on stabilizing a dockerized version of the LA infrastructure for SBDI available at https://biodiversitydata.se.

Look for possibilities to participate in Biodiversa+ call. Austrian initiative may be of interest – an interface between Scratchpad and the Living Atlases infrastructure to enhance incorporation of national taxonomic backbones.
Interested in supporting a hosted portal for the Sámpi region together with community partners.

Sámpi covers part of Sweden, Norway, Finland and Russia.

9 sami languages and meänkieli in the region.
PRIORITY 3: COMMUNITY AND CAPACITY
OBSERVATION.ORG – GLOBAL PLATFORM

- Non-profit foundation under Dutch law
- International board
- Partners on advisory board & project team
- Secretariat 10 FTE (developers and support)
- Website, mobile apps, API
- Casual observations, transects and point counts
- Validation by expert users and automation (AI)
- 195M observations, 500K+ users, 900 experts
- On GBIF: 67M validated occurrences
Continue the identification and enrollment in GBIF of new institutions producing and/or holding biodiversity data,
PRIORITY 3: COMMUNITY AND CAPACITY

Developing the GBIF network to meet future needs and challenges
PRIORITY 4: INFRASTRUCTURE AND DATA PRODUCTS

- Maintain and evolve infrastructure to advance biodiversity-related knowledge
PRIORITY 4: INFRASTRUCTURE & DATA PRODUCTS

- Activity 4.1: Enhance robustness of the core GBIF infrastructure
- Activity 4.2: Enhance support services for data publishers and users
- Activity 4.3: Enhance features and capabilities of the GBIF infrastructure
- Activity 4.4: Drive data standards development
ACTIVITY 4.1: ENHANCE ROBUSTNESS OF THE CORE GBIF INFRASTRUCTURE

- Improving national and AP infrastructure
  - France: OpenObs
  - Symbiota: User interface upgrade
  - Cameroon: upgrade of the Cameroon Biodiversity Information System
  - Observation International: improved Website, mobile app, API
  - TaiBIF: portal update with interactive visualizations
  - Ireland: National Biodiversity Data Centre

Hemideina crassidens observed in New Zealand by Kyle Bland. Photo via iNaturalist (CC BY-NC 4.0)
ACTIVITY 4.2: ENHANCE SUPPORT SERVICES FOR DATA PUBLISHERS AND USERS

- Integration of all CBD national platforms
  - Guatemala

- GRSciColl
  - Switzerland - Synchronize the Swiss Collections Registry
  - Colombia – increased from 50 to 130 collections registered
  - Sweden – curated across Swedish collections and data
  - Ireland – plans to ensure dataset providers are represented
ACTIVITY 4.3: ENHANCE FEATURES AND CAPABILITIES OF THE GBIF INFRASTRUCTURE

- **VertNet**: BELS - Biodiversity Enhanced Location Services (phase 1) [https://github.com/VertNet/bels](https://github.com/VertNet/bels)

- **Australia**: Event based search capabilities (shared development) and Extended download capabilities

- **Symbiota**: Material sample & associated occurrence and Taxonomy module

- **France**: Shared IPT development

- **TaiBIF**: Taxonomic information management tool
ACTIVITY 4.4: DRIVE DATA STANDARDS DEVELOPMENT

- **Belgium**: Movebank and Camera Trap Data Package
- **TaiBIF**: camera trap data management system
- **Sweden**: updated R-packages for occurrence downloads

*Eolophus roseicapilla* (Vieillot, 1817) observed in Australia by Anna Lanigan (licensed under [http://creativecommons.org/licenses/by-nc/4.0/](http://creativecommons.org/licenses/by-nc/4.0/))
PRIORITY 4: INFRASTRUCTURE & DATA PRODUCTS

EVENT BASED SEARCH

- Event based search capabilities
- Shared development with ALA & GBIF
- Extended download capabilities
- Hierarchical event structure
  - Survey
  - Sample
  - SiteVisit
  - Find
  - Occurrence
  - MeasurementOfFact
Camtrap DP

Camera Trap Data Package (or Camtrap DP for short) is a community developed data exchange format for camera trap data.

Camtrap DP is endorsed by the camera trap data management systems Agouti, eMammal, TRAPPER, Wildlife already available as an export format in some of...
Academic training to strengthen and expand national and regional data publication and data use
Complete the upgrade of the Cameroon Biodiversity Information System and connect it to GBIF and other national platforms through the API (Application Programming Interface);

Integrate the model validated by the CHM scientific committee into the Biodiversity Information System currently being upgraded.
54 Collections

Initially in August 2021, migrated from IH and GRBio.

13

Collections

After including those that publish data through the SiB Colombia

- Gradual growth and work with biological collections to ensure that they take ownership of the tool.
- Coordination with the National Registry of Collections.
- Development of **OpenObs: the French Biodiversity Data Portal**

OpenObs provides open access to millions of biodiversity species records available in the National Inventory of Natural Heritage: INPN

⇒ visualisation and download of occurrences data.

⇒ first version in October 2020 (openobs.mnhn.fr) and ongoing developments linked with the community

- Contributions to **IPT** development
• Maintain and ensure continued success of Ireland’s biodiversity mapping portal

Biodiversity Maps is a national portal that compiles biodiversity data from multiple sources and makes it freely available online.

<table>
<thead>
<tr>
<th>Number of records</th>
<th>Number of species</th>
<th>Number of datasets</th>
<th>Last updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,941,532</td>
<td>17,326</td>
<td>172</td>
<td>20/09/2022</td>
</tr>
</tbody>
</table>

• Allocate time to Global Registry of Scientific Collections (GRSciColl) to ensure dataset providers are represented
Update the current SBDI4R package based on ALA4R to be based on the new galah package.

Curate and clean-up GRSciColl across Swedish collections and data.

Apply for research infrastructure funding for the period 2025-2028.
GRSCICOLL
- Synchronize the Swiss Collections Registry with GRSciColl (40 institutions, >250 collection entities)

NATIONAL INFRASTRUCTURE
- Interconnect national data resources provided by partners of the network
- Diversify data types aligning vocabularies with relevant standards
- Facilitate data mobilization and access
• Improving TaiBIF portal to include interactive visualizations of data
• Developing a taxonomic information management tool to track nomenclatural histories of species and handle multiple taxonomic views
• Developing a desktop program for the camera trap data management system to support the use in field stations without stable Internet connection
• *alliance for biodiversity knowledge*

• Catalogue of Life and GBIF
  • Starting with a concrete incubator

• Open infrastructure for taxonomic checklists
  • +50,000 checklists
  • Compare names across checklists
  • Tools for building checklists including the GBIF taxonomic backbone and COL monthly checklist
  • Open for use by others
PRIORITY 4: INFRASTRUCTURE AND DATA PRODUCTS

- Maintain and evolve infrastructure to advance biodiversity-related knowledge